ST. MARY'S UNIVERSITY

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St. Mary's University, Ethiopia

FACTOR AFFECTING CREDIT RISK MANAGEMENT AND ITS EFFECT ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN ETHIOPIA

By

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A THESIS SUBMITTED IN PARTIAL FULFULFILLMENT REQUIREMENTS FOR DEGREE OF MBA IN ACCOUNTING AND FINANCE

ADDIS ABABA ETHIOPIA

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DECLARATION

I, the undersigned, declare that this Thesis entitled Credit Risk Management and Its Impact on Financial Performance of Commercial Banks of Ethiopia is my original work and that it has not been presented for a degree in any other University, and that all the sources of materials used for the thesis have been duly acknowledged.

Declared by: Tesfaye Kebede

Signature:……

THESIS SUBMISSION APPROVAL SHEET

This is to certify that the thesis entitled“ “Credit Risk Management And Its Impacts On Financial Performance Of Commercial Banks Of Ethiopia ” to the School of Graduate Studies of **ST. MARY'S UNIVERSITY** and carried out by Tesfaye Kebede Dirrib Id.No/0132/15 under my supervision. Therefore I recommend that the student has fulfilled the requirements and hence hereby can submit the thesis for defense. **”** submitted in partial fulfillment of the requirements for the degree of MBA in Accounting and Finance**.**

Name of Principal Advisor Simon Tareke (Asst. Professor) Signature  Date

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Above all I would like to thank God for being with me in every step of my activities with this work. I am very glad to express my sincere gratitude and appreciation to Simon T (ASS.Ph) for his invaluable, constructive and enduring comments and professional advice from the inception to the completion of this thesis.

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ABSTRACT

This study through to the critical relationship between credit risk management and the financial performance of commercial banks in Ethiopia. Employing a quantitative approach and a ten-year panel data analysis, the research sheds light on how effectively managing credit risk can significantly impact a bank's financial health. The findings reveal that key credit risk management strategies, like maintaining strong capital adequacy and liquidity ratios, play a vital role in boosting a bank's return on assets (ROA). The analysis further exposes the detrimental effects of poorly managed credit risk. Non-performing loan ratios, indicative of borrower defaults, and wider interest spreads, potentially reflecting riskier lending practices, both exhibit a negative and statistically significant correlation with ROA. Interestingly, the study suggests that inflation has a negative but statistically insignificant impact on ROA, highlighting the importance of considering a broader range of factors beyond just traditional risk management practices. In conclusion, the study underscores the undeniable link between effective credit risk management and the financial well-being of Ethiopian commercial banks. By implementing sound credit risk management policies that prioritize strong capital adequacy, liquidity, and controlling non-performing loans, banks can pave the way for sustainable financial performance and contribute to a more stable financial system in Ethiopia.

Key words: banks, credit risk management, financial performance

CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

Credit risk management is a critical aspect of the banking industry, as it directly impacts the financial performance and stability of banks. Effective credit risk management practices are essential for banks to maintain a healthy loan portfolio, minimize loan defaults, and ensure sustainable profitability (Musa, 2021). In the context of the Ethiopian banking sector, which has experienced significant growth and expansion in recent years, understanding the relationship between credit risk management and bank financial performance is crucial for guiding strategic decision-making and enhancing the overall resilience of the industry.

Several studies have been conducted to examine the impact of credit risk management on bank financial performance in various countries. In the Western context, research has provided valuable insights. For instance, Kiyota (2017) analyzed the relationship between credit risk management and bank performance in the United States, finding that banks with more effective credit risk management practices had higher profitability and lower non-performing loan ratios. Similarly, Fernandes et al. (2020) investigated the impact of credit risk management on the financial performance of banks in Portugal, highlighting the importance of credit risk mitigation strategies in enhancing bank profitability and stability.

Additionally, Poudel (2012) examined the influence of credit risk management on the financial performance of Nepalese commercial banks, concluding that effective credit risk management significantly improved bank profitability and reduced loan default rates. Moreover, Saba et al. (2021) explored the relationship between credit risk management and the financial performance of

banks in Italy, emphasizing the need for robust credit risk assessment and monitoring practices to maintain a healthy loan portfolio.

In the African context, similar studies have been conducted; Mwangi and Muturi (2018) investigated the effect of credit risk management on the financial performance of commercial banks in Kenya, finding a positive and significant relationship between credit risk management practices and bank profitability. Alu et al. (2020) examined the impact of credit risk management on the financial performance of commercial banks in Nigeria, highlighting the importance of credit risk assessment, monitoring, and control in enhancing bank performance.

Similarly, Ozili (2019) analyzed the relationship between credit risk management and the financial performance of banks in South Africa, emphasizing the need for proactive credit risk mitigation strategies to maintain a stable and profitable banking sector. Furthermore, Musa (2021) explored the impact of credit risk management on the financial performance of commercial banks in Sudan, underscoring the critical role of credit risk management in ensuring the sustainability and growth of the banking industry.

The current study on credit risk management practice and its effect on bank financial performance in Ethiopia from 2014 to 2023 are essential for several reasons. First, the Ethiopian banking sector has experienced significant growth and expansion in recent years, making it crucial to understand the impact of credit risk management on the financial performance of banks operating in this rapidly evolving market (NBE, 2022).

Second, the study will contribute to the limited empirical literature on the relationship between credit risk management and bank financial performance in the Ethiopian context, providing valuable insights for policymakers, regulators, and bank management. Third, the findings of the

study will have practical implications for the implementation of effective credit risk management strategies, which can enhance the overall stability and profitability of the Ethiopian banking industry. Banks are relevant economic development through the financial service they provide intermediation role can be catalyst for economic growth

1.2. Problem Statement

The study of credit risk management and its effect on bank financial performance is crucial in the Ethiopian context for several reasons. First, the Ethiopian banking sector has experienced significant growth and expansion in recent years, with the number of banks and total assets increasing substantially (NBE, 2022). This rapid growth has led to a heightened need for effective credit risk management practices to ensure the stability and sustainability of the banking industry. Ineffective credit risk management can result in increased non-performing loans, reduced profitability, and even financial crises, which can have far-reaching consequences for the overall economy (Mwangi & Muturi, 2018).

Second, there are many empirical literature on the relationship between credit risk management and bank financial performance in Ethiopia. While studies have been conducted in other African countries, such as Kenya (Mwangi & Muturi, 2018), Nigeria (Alu et al., 2020), and South Africa (Ozili, 2019), there is a paucity of research that specifically examines this relationship in the Ethiopian banking sector. Understanding the impact of credit risk management on bank financial performance in Ethiopia is crucial for informing policy decisions, enhancing regulatory frameworks, and guiding strategic decision-making within the banking industry.

Recent studies conducted in the Ethiopian context have provided valuable insights. Aemro (2019) examined the effect of credit risk management on the financial performance of commercial banks in Ethiopia, finding a significant positive relationship between effective credit risk management and bank profitability.

Similarly, Belay (2020) investigated the impact of credit risk management on the financial performance of private commercial banks in Ethiopia, highlighting the importance of credit risk assessment, monitoring, and control in enhancing bank performance. Wondimagegnehu (2021) explored the relationship between credit risk management and the financial performance of state-owned commercial banks in Ethiopia, emphasizing the need for robust credit risk mitigation strategies to maintain a healthy loan portfolio.

Additionally, Gidey (2022) analyzed the effect of credit risk management on the financial performance of microfinance institutions in Ethiopia, underscoring the critical role of credit risk management in ensuring the sustainability and growth of the microfinance sector. Lastly, Alemu (2023) investigated the impact of macroeconomic factors on the credit risk management practices of commercial banks in Ethiopia, highlighting the importance of considering external economic conditions in the implementation of effective credit risk management strategies.

Despite these recent studies, there is still a gap in understanding the specific impact of credit risk management practices on bank financial performance, particularly in terms of key indicators such as Capital Adequacy Ratio (CAR), Liquidity Ratio (LIQR), and Non-Performing Loan Ratio (NPLR), as well as the influence of macroeconomic factors like Gross Domestic Product (GDP), Inflation Rate (INR), and Interest Spread Ratio (ISPR). This study aims to fill this empirical gap by providing a comprehensive analysis of the relationship between credit risk management practices and bank financial performance in Ethiopia, considering the aforementioned financial and macroeconomic indicators.

1.3. Research Objective

1.3.1. General objective

The main objective of this study was to investigate the effect of credit risk management on commercial Banks' performance in Ethiopia for the ten years from 2014 to 2023.

1.3.2. Specific objectives

1. To examine the effect of liquidity ratio on financial performance of commercial banks.
2. To evaluate the effect of capital adequacy ratio on financial performance of commercial bank
3. To explain the effect of Non-performing loan ratio on financial performance of commercial bank

4 To determine the effect of GDP on financial performance commercial bank

5 To examine the effect of inflation on financial performance commercial bank

6 To determine the effect of interest spread rate on financial performance commercial bank

6.7. Research hypothesis

Based on empirical and theoretical background information the researcher came up with following hypothesis:

H01: Liquidity ratio had a significant impact on performance of commercial banks of Ethiopia.

Liquidity risk management is crucial for banks to maintain sufficient funds to meet their short-term obligations. Adequate liquidity enables banks to take advantage of investment opportunities and meet customer withdrawal demands (Alshatti, 2015). Studies have shown a positive relationship between liquidity ratio and bank financial performance. Belay (2020) found that liquidity ratio had a significant positive impact on the financial performance of private commercial banks in Ethiopia. Similarly, Aemro (2019) and Wondimagegnehu (2021) reported a significant positive relationship between liquidity ratio and the profitability of commercial banks in Ethiopia.

H02: Capital adequacy ratio had a significant impact on performance of commercial banks of Ethiopia.

The capital adequacy ratio (CAR) is a key indicator of a bank's financial strength and ability to absorb losses. Banks with higher CARs are better equipped to withstand economic shocks and maintain financial stability (Karim & Alam, 2013). Studies in the Ethiopian context have shown that CAR has a significant positive impact on bank financial performance. Aemro (2019) and Belay (2020) found that CAR was a significant determinant of profitability for commercial banks in Ethiopia. Wondimagegnehu (2021) also reported a positive association between CAR and the financial performance of state-owned commercial banks in the country.

H03: Non-performing loan ratio had a significant impact on performance of commercial banks.

Non-performing loans (NPLs) are a key indicator of credit risk, as they represent loans that are in default or close to default. High NPL ratios can negatively impact bank profitability, as they require higher loan loss provisions and reduce the bank's ability to generate income from its loan portfolio (Ozili, 2019). Studies in Ethiopia have consistently found a significant negative relationship between NPL ratio and bank financial performance. Aemro (2019), Belay (2020), and Wondimagegnehu (2021) all reported that a higher NPL ratio was associated with lower profitability for commercial banks in the country.

H04: Gross domestic product had significant impact on financial performance of commercial banks.

Macroeconomic factors, such as GDP, can have a significant influence on the financial performance of banks. During periods of economic growth, banks typically experience higher demand for loans and investments, leading to increased revenue and profitability (Alemu, 2023). Conversely, economic downturns can adversely affect bank performance. In the Ethiopian context, Alemu (2023) found that GDP growth had a positive and significant impact on the credit risk management practices of commercial banks, which in turn influenced their financial performance.

H05: Inflation had a significant impact on the financial performance of commercial banks.

Inflation can affect bank financial performance in various ways. High inflation can erode the real value of bank assets, particularly loans, and lead to increased lending rates, which may discourage borrowing and reduce bank profitability (Ozili, 2019). Studies in Ethiopia have shown that inflation has a significant negative impact on bank financial performance. Alemu (2023) found that inflation rate had a significant adverse effect on the credit risk management practices of commercial banks, which ultimately influenced their financial performance.

H06: Interest spread had a significant impact on financial performance of commercial banks.

The interest spread, which is the difference between the interest rate charged on loans and the interest rate paid on deposits, is an important determinant of bank profitability. A wider interest spread can lead to higher net interest income and improved financial performance (Mwangi & Muturi, 2018). In the Ethiopian context, Alemu (2023) reported that the interest spread ratio had a significant positive impact on the credit risk management practices of commercial banks, which in turn influenced their financial performance.

By examining the relationships between these key variables and bank financial performance, this study aims to provide a comprehensive understanding of the factors influencing the performance of commercial banks in Ethiopia. The empirical findings will contribute to the existing literature and inform policy decisions and strategic planning within the Ethiopian banking sector.

1.5 Scope of the Study

This study is focused on examining the effect of credit risk management practices on the financial performance of selected commercial banks in Ethiopia. The scope of the study is delimited in terms of the geographical location, the specific banks included, and the time period under investigation.

Geographically, the study is confined to Ethiopia, which is a rapidly growing economy with a thriving banking sector. The banking industry in Ethiopia has been undergoing significant changes and reforms in recent years, making it an interesting and relevant context for this research.

The study specifically focuses on 10 selected commercial banks in Ethiopia that have been in operation for more than 10 years. This ensures that the banks have established operations, policies, and practices, which is crucial for understanding the impact of credit risk management on their financial performance. The banks included in the study are: Awash International Bank S.C., Dashen Bank S.C., Bank of Abyssinia S.C., Wegagen Financial Institution S.C., United Bank S., Nib Global Financial Institution S.C., Lion Worldwide Bank S.C., Abay Bank S.C., and Zemen Financial Institution S.C.

Finally, the time period covered in this study is from 2014 to 2023. This timeframe was selected to capture the recent trends and developments in the Ethiopian banking sector, as well as to provide a comprehensive understanding of the relationship between credit risk management and financial performance over a significant period.

1.6 Organization of the study

The studies have five subsequent chapters. The first chapter contains an introduction, statement of the problem, objectives of the study, significance of the study, and scope of the study. The second chapter describes the review of related literatures (theoretical and empirical). The third chapter would discussed research design and methodology. The fourth chapter was the analysis, discussions and presentation part of the research findings, and the last chapter; chapter five presents the summary and conclusions, and recommendations given and remarked based on the study results; followed by the list of references and appropriate appendix.

CHAPTER TWO: REVIW OF RELATED LITERATURE

2.1. Conceptual review

2.1.1 What is risk?

According to Khan and Jain (2004), risk is defined as "the variability of the actual return from the expected returns associated with a given asset or investment." Risk is also described as "the possibility that some unfavorable event (both financial and physical) will occur" by Ehrhardt and Brigham (2011). Credit risk is a financial exposure resulting from a Bank's dependence on another party (Counterparty) to perform an obligation as agreed (National Bank of Ethiopia 2010).

2.1.2 Credit Risk

The simplest way to define credit risk is the possibility that a counterparty or bank borrower won't fulfill its responsibilities according to the terms that were agreed upon. By keeping credit risk exposure within reasonable bounds credit risk management seeks to optimize a bank's risk-adjusted rate of return (Yuqi Li, 2006) Banks must control both the risk associated with specific credits or transactions and the credit risk present in the portfolio as a whole Banks ought to take into account how credit risk and other risks are related. Any banking organization's long-term success depends on its ability to manage credit risk effectively which is a crucial part of a comprehensive approach to risk management (Edward, 2006). The possibility that the actual return on an investment or loan will differ from the projected return is known as credit risk An increase in Bank credit risk gradually leads to liquidity and solvency problems Credit risk may increase if the Bank lends to borrowers it does not have adequate Knowledge about (Alshatti, 2015).

Robert and Gary (1994) state that the most obvious characteristics of Failed Banks is not poor operating efficiency however but an increased volume of nonperforming loans. The success of

banks' operations is largely dependent on the precise measurement and effective management of credit risk which is by far the biggest risk that they face (Mwangi & Muturi, 2018).

According to Tomak (2013) credit risk is the extent to which value variations in derivatives and debt instruments are caused by shifts in the underlying credit quality of counterparties and borrowers Losses resulting from credit customer's failure or refusal to make full and timely payments are referred to as credit risk. The risk that banks take on when a borrower (customer) fails to make payments on time or at maturity is known as credit risk If not properly managed this risk also known as "counterparty risk "has the potential to cause financial difficulties for the bank (Saba, Presbitero, & Castelli, 2021). The Banks supervisors are well aware of this problem it is however very difficult to Persuade Bank mangers to follow more prudent credit policies during an economic Upturn especially in a highly competitive environment. They claim that even Conservative mangers might find market pressure for higher profits very difficult to Overcome.

2.1.3 Credit risk Management

Credit risk management, according to Tseganesh (2012) includes all management functions like exposure identification, measurement, monitoring, and control. Credit risk management practices are essential for the banking sector's long-term success and that inadequate credit risk management policies will be a major source of crisis for the sector.

In order to minimize the negative effects of taking risks, credit risk management practices are defined as the process of analyzing and updating credit risk management documents and applying them consistently to the actual credit granting credit administration, monitoring, and appropriate credit risk-controlling procedures with an risk environment (Aemro, 2019). The effectiveness of the credit risk management process depends on a number of factors, including staff quality, credit

culture, committed top management bodies, adequate training programs and appropriate organizational structures (Poudel, 2012).

2.1.3.1. Assessment of Banks' Credit Risk Management

The assessment of banks' credit risk management, as discussed in the collected works, highlights several comprehensive and important aspects: Firstly, management teams carry out the critical duty of conforming and periodically reviewing credit strategies and credit policies. These credit strategies and policies are able to demonstrate the banks' ability to bear risk and the level of profit they project to achieve for incurring various risks (Fernandes, Artes & Aguiar Andrade, 2020).

Similarly, executives have the responsibility of developing robust policies and procedures for identifying, monitoring, measuring, and controlling credit risks. These policies and procedures are based on the credit risk strategies that have been confirmed by the board of directors. The purpose of these policies and procedures is to effectively address the credit risk problems that all banks evolve at both the individual credit and portfolio levels (Mengistu, 2018).

Secondly, it is essential for banks to thoroughly analyze, evaluate, and handle the credit risks that are inherent in all their products and activities. Banks must ensure that any additional credit risks are under the control of their robust risk management mechanisms prior to the advance approval by the respective board directors or appropriate committee. Banks need to operate in a well-defined credit extension environment, including clearly identified target markets, stringent understanding of obligors and objective structures of credit and repayment sources.

Thirdly, banks are required to set maximum credit limits at the individual borrower and counterparty levels. It is always essential for commercial banks to have clearly established policies and procedures in place for approving additional credits, as well as amendments, renewals, and

refinancing of existing credits. This ensures that the credit extension and management processes are well-structured and controlled (Smirlock, 2014).

Overall, the assessment of banks' credit risk management emphasizes the paramount importance of having robust and comprehensive credit strategies, policies, and procedures in place to identify, monitor, measure, and control credit risks effectively. This helps banks navigate the credit extension environment and manage their credit portfolios in a way that aligns with their desired risk-return profile, ultimately contributing to the long-term sustainability and profitability of the banking sector (Ogboi, 2013).

2.1.4 Measure of bank performance

The Impact of Credit Risk Management on Financial Performance of Commercial Banks in Kenya, 2012 literature review by Ogilo Fredrick, examined the relationship between credit risk management determinants using CAMEL indicators and the financial performance of Kenyan commercial banks It also examined the effect of credit risk management on the financial performance of commercial banks. The dependent variable in the study was financial performance (ROE), while the independent variables were the following: CAMEL components, capital adequacy, asset quality, management efficiency, and liquidity (Adula, 2011). This study used a causal research design which was made possible by the use of secondary data that came from surveys of the banking sector published by the Central Bank of Kenya (Ogboi, 2013).

The data for the study were analyzed using multiple regression analysis and the results are shown as tables and regression equations. The results of the study indicate that the financial performance of commercial banks is significantly impacted by the CAMEL components. The CAMEL model can be used as a stand-in for credit risk management according to the study's findings. The other study that discovered the impact of credit risk management on banks' profitability was carried out

in 2009 and was titled Credit Risk Management and Profitability in Commercial Banks in Sweden (Saba, Presbitero & Castelli, 2021).

2.1.5 Determinants of risk management practice on banks performance

The determinants of bank performance are typically classified into two or sometimes three categories in the literature. Arifin and Salina (2009), cited in Al-Tamimi, 2010; Aburime, 2005, for example, divided the determinant factors into two categories: macroeconomic variables and bank-specific (internal) variables. The performance of the bank is impacted by the internal factors which are specific bank attributes. The internal decisions made by the board and management regarding risk management procedures essentially impact these factors (Mwangi & Muturi, 2018).

The external factors that impact the financial performance of banks are those that are sector or country wide outside the company's control. Credit risk management practices have a negative relationship with financial performance (ROA and ROE), and they also have a significant impact on the other hand the remaining factors have a positive and significant impact on Nigerian commercial banks. Smirlock, (2014) was attempt to integrate sector specific factors like credit risk (NPL cost per unit to loan ratio), capital risk (capital adequacy ratio), liquidity risk (liquidity ratio), and operational risk (ratio of operational cost). However as a bank-specific determinant of bank performance these studies considered risk practices such as bank size and insolvency risk managements.

2.2 Theoretical review

In order to provide a description summary and critical evaluation of these works in relation to the research problem under investigation a theoretical literature review surveys books , scholarly articles, and any other sources pertinent to a given issue area of research or theory It would aid in assuming knowledge of and acceptance of theories related to credit risk management and financial

performance, which would improve comprehension of the idea Even as banks expand into new markets sounds. Credit risk management has always been essential to their success Nonetheless, inadequate loan books are the root cause of most bank failures (Doyran, (2012).

For instance, Franklin National Bank reported significant losses on its foreign exchange transactions but it also possessed a large number of bad loans. Similarly a large number of "thrift" and commercial bank failures in the USA in the 1980s were partially brought on by problem loans and an imbalance between assets and liabilities. The demise of mortgage banks in 1995 in Japan was a warning sign of serious issues with the balance sheets of almost all banks (Heffernan, 2005).

2.1.1 Portfolio theory

Harry Markowitz is the creator of modern portfolio theory in his 1955 paper “Portfolio Selection,” which appeared in the Journal of Finance he first described the analysis of investment portfolios (Pesaran, et.eal, 2016). The novel method described in this article involved building a portfolio by taking into account each stock's expected rate of return, risk, and most importantly correlation a measure of how closely related the stocks are to one another. In the context of contemporary portfolio theory diversification is crucial. The Markowitz approach is thought of as a single period approach in which the investor must choose which specific securities to invest in at the start of the period and hold those securities through to the end (Treacy, & Carey, 2020).

This choice is similar to choosing the best portfolio from a range of potential portfolios because a portfolio is a collection of securities. Investors primarily use Markowitz portfolio theory to choose their portfolios based on the trade-off between return and risk. The trade-off between risk and return has been assessed using the efficient set theorem an efficient collection of portfolios consists of the portfolios that the investor deems ideal (Pesaran, et.eal,2016).

This portfolio is referred to as an efficient frontier because it is located on the feasible set's "northwest boundary the curve in the risk-return space that has the highest expected rates of return for each risk level can be used to characterize the efficient frontier (Berger, 1999).

According to Anderson and Fraser (2008), the Financial Institute (FI) manager must maintain widely traded loans and bonds as assets or in other words be able to compute loan or bond returns. The FI's overall credit risk exposure can be measured and managed using portfolio diversification models Modern portfolio theory models for loans have been developed through extensive research despite the nontrade nature of many loans (Pesaran, et.eal, 2016). Even though it is in modern portfolio theory has been applied to loans financial institutions (FIs) that lack access to market pricing data frequently find it challenging to directly apply the theory because many assets, including loans are not purchased and sold in well-established markets (Bluhm, Overbeck & Wagner, 2016).

In order to assess the overall concentration or credit risk exposure of the FI, managers may be able to build a modified or partial application of MPT if there is enough loan volume data available. Therefore an individual financial institution (FI) can use these data to compare its internal loan allocations across major lending sectors including real estate, commercial and industrial, against market benchmarks. The Shared National Credit (SNC) database, for instance, offers a market benchmark for the distribution of loans among different borrowers or industries (Anderson & Fraser, 2008). As the NRB (2013) study showed, there are several holes in the theory. Markowitz's original goal was to discuss how important investment portfolios are for distributing risk when investing.

2.3.2 The Capital Asset Pricing Model (CAPM)

NRB (2013) said that Sharpe (1964) and Lintner (1965) were the first to develop the Capital Asset Pricing Model (CAPM) The Markowitz one period mean variance portfolio theory served as the foundation for the Sharpe and Lintner version of the CAPM. According to Markowitz, investors are risk averse and are only concerned with the mean (mean) of an investment's return over a single period of time and the variance (risk). As a result, investor's select efficient portfolios, which either minimize variance given a given expected return or maximize expected return, giving a certain variance of portfolio return (Flamini, Schumache & Sepe, 2009).

The fundamental presumptions form the basis of the Capital Asset Pricing Model First; because they are risk averse, investors only consider the expected return and standard deviation of returns over a single holding period when assessing their investment portfolios. Second, capital markets are ideal in many ways: all assets have infinite divisibility; there are no taxes, transaction fees or limitations on short sales information is freely available to all parties at no cost; and all investors have access to risk-free borrowing and lending rates(Flamini, Schumache & Sepe, 2009). Thirdly, the same investment opportunities are available to all investors. And fourth, the estimates of standard deviations of return, correlations between asset returns, and expected returns for each individual asset are all made by investors in the same way. The Capital Asset Pricing Model assesses systematic risks that can be compared to other assets primarily from the perspective of the investor (Treacy, & Carey, 2020).

2.3.3 Asymmetric Information Theory

According to a study conducted by Gray, Cassidy, and RBA in 2013 they assert that Information Asymmetry pertains to a circumstance in which enterprise owners or managers possess superior knowledge regarding the risks that their business encounters compared to the knowledge possessed

by lenders Problems arise in allocating loans to borrowers with unfavorable traits like high levels of risk or the inability to make use of the opportunities due to information asymmetries Treacy & Carey (2020). The theory outlines a scenario where all the parties participating in a task are unaware of important information.

2.3.4 Transaction cost theory

The study by NRB in 2013 indicated that according to Schwartz's theory which was first proposed in 1974, suppliers could potentially have an upper hand compared to traditional lenders when it comes to evaluating the actual financial position or creditworthiness of their customers. Suppliers possess an enhanced capacity to oversee and ensure the payment of the credit is made Suppliers may enjoy a cost advantage over financial institutions due to these various advantages (aile & Joshi,2022).

2.3 Empirical studies

2.2.1 Studies in Western countries

Fan and Yijun, (2016) investigated the relationships between credit risk management and profitability of commercial banks in a European research model ROE and ROA are defined as close to profitability while NPLR and CAR are defined as proxies for credit risk management. The study collects data on the 47 largest commercial banks in Europe in the years 2007-2012 and formulates four hypotheses related to the research question. A series of statistical tests are performed to verify the existence of relationships. Other statistical tests are performed to determine whether the relationship is stable or not. The results show that credit risk management has a positive effect on the profitability of commercial banks. Among the two credit risk management options, NPLR has a significant effect on both ROE and ROA, while CAR has an insignificant

effect on both ROE and ROA. However, between 2007 and 2012, the relations between all the substitutes are not stable but variable.

Achou and Tenguh (2008) show that there is a significant relationship between Bank performance (in terms of return on asset) and credit risk management. Better credit risk management results in better Bank performance. Thus, it is of crucial importance that Banks practice prudent credit risk management and safeguarding the assets of the Banks and protect the investors' interests. GDP growth, interest and inflation were used as external factors of the profitability of banks. These six variables were combined into one total bank profitability. Return on assets (ROA) was used to measure bank performance. It was found that liquidity and credit risk negatively affect the profitability of the bank.

. Return on equity was used as a proxy for financial performance and CAMEL components as a proxy of credit risk management. The study found out a positive and statistically significant relationship between effective credit risk management and liquidity and positive but insignificant relationship between credit risk management and capital adequacy, asset quality, management soundness and earnings

2.2.2 Studies in Asian

Juliana (2017) examines the impact of credit risk on Chinese banking performance. Secondary data was collected from the five largest commercial banks in the country over a 7-year period from 2008 to 2014. The study used non-performing loans, solvency ratio, decreased loan reserve and loan discount costs to measure credit risk. Financial income was used the data analysis was conducted using a balanced panel regression model, and the results of the study show that non-performing loans and solvency have a significant positive effect on the financial performance of Chinese commercial banks.

Usman (2014) in his work evaluated the profitability of 23 commercial banks operating in Pakistan during 2009-2012. His research deals with the only internal factors that affect the profitability of commercial banks in Pakistan. This study used ordinary least squares (OLS) to examine the effects of cost efficiency, liquidity, solvency, deposits and size, Profitability (ROA) of commercial banks. The empirical results of his study were that cost efficiency, liquidity and solvency are management audit variables that had a significant impact on the profitability of commercial banks operating in Pakistan. Other variables such as deposits and bank size didn't affect profitability

2.3.3. African studies

Lasis and Marvis (2018) investigate the impact of financial risk management on the profitability of commercial banks in Nigeria over the period 2011-2016. Profitability is measured by return on capital, while financial risk management is measured by liquidity risk, credit risk and solvency risk as independent variables a multiple regression technique was used. The results showed that liquidity risk has a positive effect on profitability, but it is insignificant. Credit risk also showed a significant negative impact on bank profitability, while solvency risk also had a positive and significant impact on the profitability of commercial banks in Nigeria.

Adeusi, Akeke, Adebisi and Oladunjoye (2013) investigated the relationship between risk management practices and financial performance in Nigerian banks. The secondary data was based on four (4) years progressive annual reports and financial statements of 10 banks and used panel data estimation technique. The result showed an inverse relationship between the financial performance of banks and bad loans, and the capital ratio was found to be positive and significant. It also indicated that the higher the assets under management of the banks, the higher the yield. The study found a significant relationship between banking performance and risk management,

which highlighted the need for banks to practice sound risk management to protect the interests of investors.

Kargi, (2011) using Return on Equity as a measure of bank's performance and a ratio of non-performing loans to total asset as proxy for credit risk management. They found that Non-performing loans (NPL) had a larger effect on profitability as measured by (ROE) than capital adequacy ratio (CAR) and the effect of credit risk management on profitability varied among Ghanaian banks included in their study.

From those studies which support a positive impact of credit risk management on banks profitability, is the study conducted and has a title Impact of Credit Risk Management and Capital Adequacy on the Financial Performance of Commercial Banks of Nigeria (OGBOI, Charles, 2013). This study examined the impact of credit risk management and capital adequacy on the financial performance of Nigerian banks. The variables used in the study were loan loss provisions (LLP), loans and advances (LA), non-performing loans (NPL), solvency (CA) and return on capital (ROA).

A panel data model was used to estimate the relationship between variables. The results showed that stable management of credit risk and solvency had a positive effect of financial results of the bank, except for loans and advances, which had a negative effect on the profitability of banks during the reporting period.

Carlos and Kenneth (2013) conducted a study on the impact of credit risk management and solvency on the financial performance of commercial banks in Nigeria between 2004 and 2009. The return on assets was used as the dependent variable and the provision for bad debts loans and receivables non-performing loans and the solvency ratio were used as independent variables.

2.2.4 Ethiopian studies

Shemendi (2019) investigated the effect of credit risk management on the profitability of Ethiopian banks in this study correlation and multiple regression analysis were performed using a random effects model. Return on equity was the dependent variable while non-performing loan, solvency, bank size, loan-to-deposit ratio, inflation and gross domestic product were the independent variables. As a result of the study it was revealed that the credit risk measured by the ratio of non-performing loans significantly affected the financial results and solvency and profitability of banks. In addition credit-deposit ration and bank size have a significant positive effect on the financial performance of banks In general bank-specific factors and external macroeconomic factors (GDP and INF) significantly affect bank profitability while industry-specific factors (interest rate differential) do not significantly affect bank profitability.

The study used one dependent variable Return on Assets (ROA) four independent variables which are Non-performing Loans to Total Loans and Advances (NPLTLA) Loan Percentage to Total Loans and Advances (LPTLA), Total Loan Amount And advances to total deposits. Credit risk measure (TLATD) and non-performing loan to loan liability ratio (NPLLP). The regression result shows that the ratio of non-performing loans to the total amount of loans, the ratio of loan obligations to the total amount of loans and the ratio of prepayments and non-performing loan to loan liability ratio shows a negative and significant effect on the financial performance of commercial banks in Ethiopia at 1% and 5% significance levels. However, the total amount of loans and advances has a positive and significant effect on the financial performance of commercial banks in Ethiopia at the 1% significance level.

Study by Elias (2015) whose main objective is to describe the level of impact of credit risk management on profitability in seven commercial banks in Ethiopia. A regression model was used

in the empirical analysis. In the model the researcher defined ROE as a profit indicator and credit risk management indicators as the ratio of credit loss coverage liquidity, operating inefficiency, loan growth and solvency ratio the regression results showed that provisions for loan losses operating inefficiency and loan growth have a positive and statistically significant effect on banks' profitability (return on equity). Finally, the results show that liquidity and solvency have a negative but statistically significant relationship with the banks' return on equity.

Awoke (2014) conducted a study on the effect of credit risk on the performance of a sample of eight commercial banks in Ethiopia from 2008 to 2012, using return on assets and total loan supply total loans as dependent variables the total cost of loans and the natural logarithm of total assets as independent variables. The results showed that the loan supply and total loan costs have an inverse relationship with the return on assets but the total amount of loans and the natural logarithm of the balance sheet have a positive relationship with the return on assets and all variables have a significant influence Return on assets

Girma (2011) investigated credit risk management and its impact on the performance of commercial banks in Ethiopia. An explanatory research design is used in the survey method of the quantitative research approach. Data were collected using a cross sectional survey method. The estimation results showed that the regression of the return on assets (ROA) shows that non-performing loans and loan provision of a financial institution are significantly negatively related to earnings.

. Dereje (2018) used non-performing loan ratio, liquidity ratio, solvency ratio, cost/income ratio and bank size as independent variables and found that all these variables have a significant impact on the financial performance of commercial banks

.Endaweke (2015) used non-performing loan ratio, liquidity ratio, solvency ratio and found that NPL ratio and liquidity ratio had a negative and significant effect on financial performance

Misker (2015) used non-performing loan ratio, solvency ratio, loan-to-deposit ratio, bank size, GDP, inflation and interest ratio as dependent variable and ROE as dependent variable and found that non-performing loan ratio and solvency ratio were significant. Inverse effect on financial performance of banks, while GDP, inflation and interest rate differential did not significantly affect financial performance

. Bruke (2018) investigated the same topic using a different model, CAMEL, to see the effects of credit risk management on financial performance of commercial banks and found that the effect of solvency and liquidity ratio on ROE was insignificant. Thus the very conflicting findings, the use of different models, and the short study period (most studies 5 years) suggest that there is a huge gap in the research field as a whole. Thus, this paper seeks to examine the impact of credit risk management on the performance of commercial banks in Ethiopia over a ten-year period from 2009 to 2018.

2.2.5 Literature Gap

Most banks' primary source of income comes from lending to customers, and banks use customer deposits to finance loan repayments. Increases in the volume of credit transactions and the number of people taking out loans in the economy inevitably lead to a broader availability of credit. As the economy and associated credit risk expand, the sector's trend of a growing bank deposit-loan ratio

has become more noticeable. When banks aren't able to effectively manage their balance sheets due to credit risk it can have a negative effect on the institution's goodwill, liquidity and net profit. Because of the current state of banks' financial performance customer confidence will continue to fall in the years to come. They might be willing to withdraw their interest towards banking sector.

2.2.6 Conceptual Framework

The main objective of this study was to investigate the effect of credit risk management on the performance of banks. Based on the review of empirical and theoretical literature the following conceptual model was prepared based on the purpose of the work. As previously described in the relevant sections of the literature review, credit risk management practices can affect bank performance and are measured by capital adequacy ratio (CAR), liquidity ratio (LR), non-performing loan ratio (NPLR). Output (GDP), inflation (IR) and interest margin (ISPM) as independent variables while return on capital (ROA) as dependent variable (performance measure), (Presbitero, & Castelli, 2021).

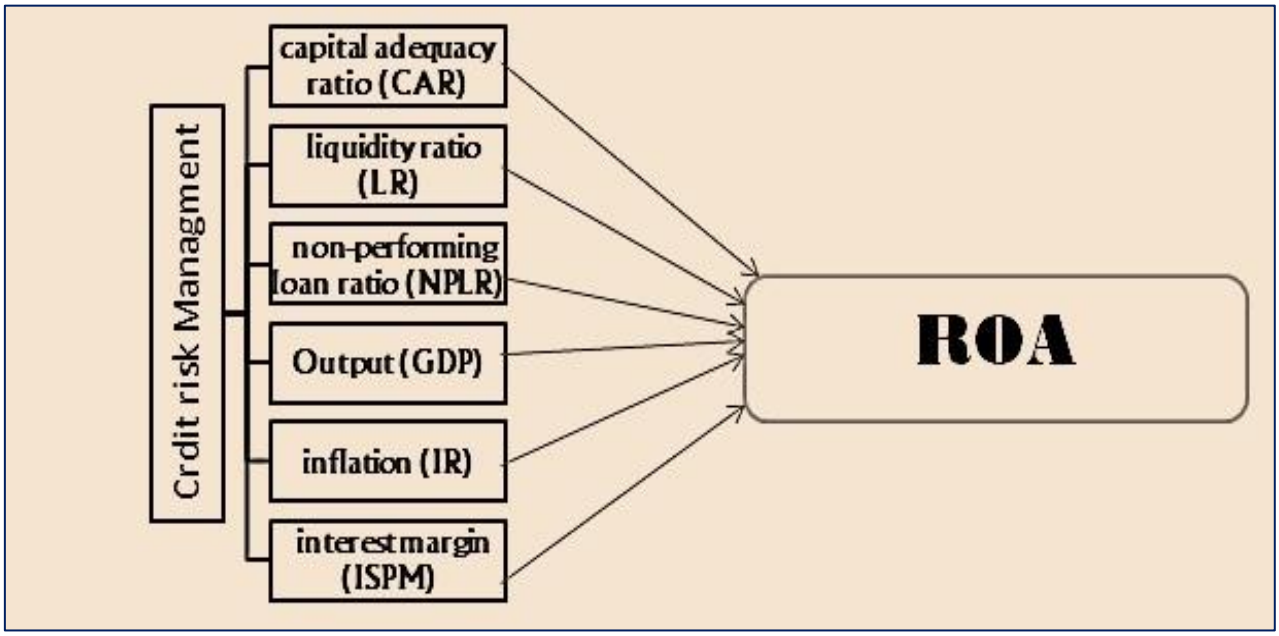


Figure 2.1: concaptual frame work drived from (Alu, Chijioke, Ezejiofor, & Olise, 2020Saba , Presbitero, & Castelli, 2021) in 20124.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Research Design

This study utilized an explanatory (causal) research design to explore the causal relationships among the dependent variable and the independent variables. The explanatory (causal) research design was chosen because the research problems were well-structured, and the researchers were focused on understanding the "causes-and-effects"relationships between the variables of interest.

This approach enabled the researchers to systematically investigate the underlying mechanisms and pathways through which the independent variables influenced the financial performance, as measured by the ROA, of the selected commercial banks. By employing the explanatory (causal) research design, the researchers were able to go beyond mere description and establish a deeper understanding of the complex interplay between credit risk management practices and the financial performance of the commercial banks in the Ethiopian banking sector.

3.3 Research Approach

For this study, the researchers employed a quantitative research approach. The decision to utilize a quantitative approach was based on the nature of the research problem and the objectives of the study. The quantitative approach was deemed most appropriate as the researchers aimed to identify the factors that influence the financial performance outcome, as measured by the return on assets (ROA) of commercial banks.

Additionally, the researchers sought to test and understand the predictive utility of the selected credit risk management variables, such as capital adequacy ratio (CAR), liquidity ratio (LIQR), non-performing loan ratio (NPLR), gross domestic product (GDP), inflation rate (INR), and interest spread ratio (ISPR). In contrast, a qualitative approach would have been more suitable if

the researchers were focused on exploring and understanding the concept or phenomenon of credit risk management in the banking sector in a more open-ended and exploratory manner.

3.4 Study Population

The target population for this study comprised the commercial banks operating in Ethiopia during the study period from 2014 to 2023. Ethiopia's banking sector consists of 2 commercial banks, with one being government-owned (the Commercial Bank of Ethiopia) and the remaining 29 being privately owned.

3.5 Sample Size

The researchers selected a sample of 10 commercial banks out of the total 31 banks in Ethiopia. The sample selection was based on the criteria of having complete data for the 10-year study period from 2014 to 2023. The sample banks included the following: The banks covered within the sample are: commercial financial institution of Ethiopia, Awash international bank S.C, Dashen bank S.C, bank of Abyssinia S.C, Wegagen financial institution S.C, United bank S, Nib global financial institution S.C, Lion worldwide bank S.C, Abay bank S.C and Zemen financial institution S.C.

3.6 Sampling Technique

The researchers employed a purposive sampling technique to select the sample banks. This sampling approach allowed the researchers to deliberately choose the sample banks based on the criteria of having complete data for the 10-year study period. The researchers considered the sample size of 10 banks, which represents the total population of 31 commercial banks in Ethiopia, to be sufficient to draw sound conclusions about the population. Additionally, the sample includes some of the oldest banks in the country, which have had extensive experience in managing non-performing loans, providing valuable insights into the credit risk management practices in the Ethiopian banking sector.

3.7. Data Source and Type

In the research undertaking, the methodology followed was determined by the nature of the problem statement or more specifically by the research objectives. In this study, the analysis consisted of secondary data over a ten-year period, from 2014 to 2023, and a comparison was made among each year between the chosen banks using their audited financial statements. The analysis used panel data of individual banks' balance sheets from the National Bank of Ethiopia (NBE) database.

While many variables were considered in the estimation process, the baseline specification included six independent variables of credit risk management indicators: capital adequacy ratio (CAR), liquidity ratio (LIQR), non-performing loan ratio (NPLR), gross domestic product (GDP), inflation rate (INR), and interest spread ratio (ISPR). The dependent variable was the profitability proxy, return on assets (ROA).

3.8. Method of Data Analysis

To achieve the objectives of the study, both descriptive and inferential analyses were employed. The secondary data collection was coded, tabulated, and presented, and the data was analyzed using econometric regression analysis methods with the EVIEWs 10 software package. The hypothesis tests regarding the coefficient estimates were conducted, and the assumptions relating to the classical linear regression model were tested as required by the study. Descriptive statistics, such as mean, standard deviation, minimum, and maximum values, were also analyzed.

3.9. Model Specification

Since this is a panel regression model, the model specification and assumptions would be different. Here's how it would be presented: This study employed a panel data regression model to analyze the impact of credit risk management on the performance of commercial banks in Ethiopia. Panel

data analysis allows for the examination of cross-sectional (between banks) and time-series (within banks) variations simultaneously.

3.9.1. Dependent Variable

The dependent variable in this study is Return on Assets (ROA), which is used as a comprehensive measure of bank performance.

3.9.2. Independent Variables

The independent variables included in the panel regression model are:

- Capital Adequacy Ratio (CAR)
- Non-Performing Loan Ratio (NPLR)
- Gross Domestic Product (GDP)
- Liquidity Ratio (LR)
- Interest Spread Rate (Isp)
- Inflation Rate (InfR)

3.9.3. Panel Regression Model

The panel least squares regression version used in this check can be expressed as follows:

$$ROA\_it = \alpha + \beta1*CAR\_it + \beta2*LIQR\_it + \beta three*NPLR\_it + \beta four*GDP\_it + \beta5*INR\_it + \beta6*ISPR\_it + \mu\_i + \nu\_t + \varepsilon\_it$$

Wherein:

- ROA_it is the return on Asset for economic group i in yr t (the based variable)
- CAR_it is the Capital Adequacy Ratio for financial institution i in 12 months t
- LIQR_it is the Liquidity Ratio for monetary institution i in year t

- NPLR_it is the Non-performing loan Ratio for economic group i in yr t

- GDP_it is the Gross domestic Product for bank i in 12 months t

- INR_it is the Inflation rate for bank i in 12 months t

- ISPR_it is the interest spread rate for bank i in year t

- α is the steady time period

- $\beta 1, \beta 2, \beta 3, \beta 4, \beta 5, \beta 6$ are the regression coefficients to be expected

- μ_i represents the unobserved financial group-particular effects (constant outcomes)

- ν_t represents the unobserved time-specific results (duration constant outcomes)

- ε_{it} is the mistake term

The panel least squares regression technique with constant results come to be selected to control for any unobserved bank-specific and time-particular factors which could have an effect on the relationship among the credit score risk manage signs and the banks' economic performance (ROA).

3.9.4. Model Assumptions

The key assumptions for the panel regression model are:

1. Linearity: The relationship between the dependent variable (ROA) and the independent variables is linear.
2. Normality: The error terms (ε_{it}) are normally distributed with a mean of zero and constant variance.
3. No Multicollinearity: There is no perfect linear relationship among the independent variables.

4. Homoscedasticity: The variance of the error terms is constant (homogeneous).
5. No Serial Correlation: The error terms are independent of one another.

The appropriate panel data estimation techniques, such as fixed effects or random effects models, will be used based on the results of the Hausman test. Diagnostic tests will also be conducted to ensure the validity of the model assumptions.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Introduction

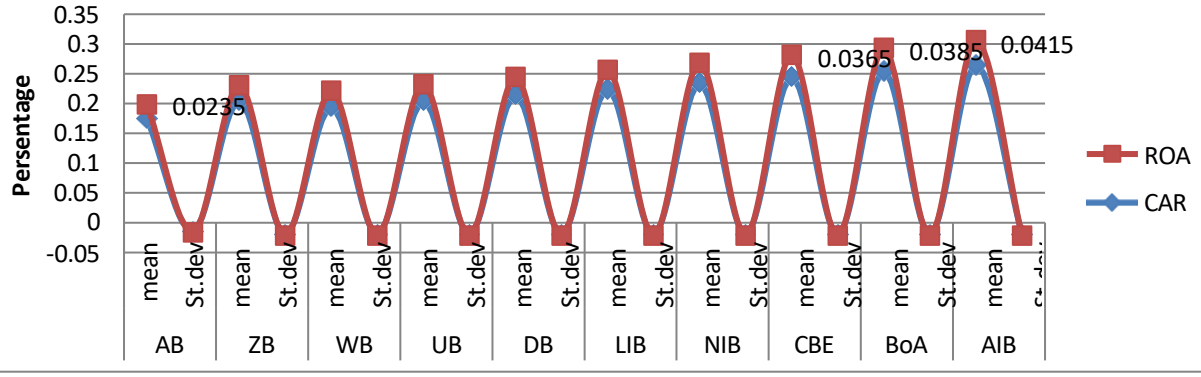
This bankruptcy offers the findings and dialogue of the panel least squares regression evaluation carried out to study the effect of credit risk management practice on financial performance 10 selected business banks in Ethiopia from 2014 to 2023. The banks covered within the sample are: commercial financial institution of Ethiopia, Awash international bank S.C(AIB), Dashen bank S.C(DB), bank of Abyssinia S.C(BoA), Wegagen Bank S.C(WB), United bank SC(UB), Nib international bank S.C(NIB), Lion international bank S.C(LIB), Abay bank S.C(AB) and Zemen Bank S.C(ZB), .

The based variable inside the examiner is the profitability proxy, return on Asset (ROA), even as the unbiased variables encompass the credit score chance control indicators: Capital Adequacy Ratio (CAR), Liquidity Ratio (LIQR), Non-performing loan Ratio (NPLR), in addition to macroeconomic elements such as Gross home Product (GDP), Inflation rate (INR), and Interest spread Ratio (ISPR).

4.2. Trend Analysis

4.2.1. Bank profitability and capital adequacy bank from 2014 to 2023 in **Ethiopia**

***Chart 4.1* Bank profitability and capital adequacy bank from 2014 to 2023 in Ethiopia**



Source: EViews Output

The data shows that the banks have varying levels of capital adequacy. Bank AB has the lowest mean CAR at 17.5%, while AIB has the highest mean CAR at 26.5%. This represents a difference of 9 percentage points between the bank with the lowest and highest capital adequacy ratios. The standard deviation of CAR is -0.02 for all banks, indicating that the CAR values for each bank were relatively stable over the time period, with little variation within each bank.

The data reveals differences in profitability across the 10 banks. Abay Bank (AB) has the lowest mean ROA at 2.35%, while awash international bank (AIB) has the highest mean ROA at 4.15%. This represents a difference of 1.8 percentage points between the bank with the lowest and highest profitability. The standard deviation of ROA is -0.0015 for all banks, suggesting minimal variation in ROA within each bank over time.

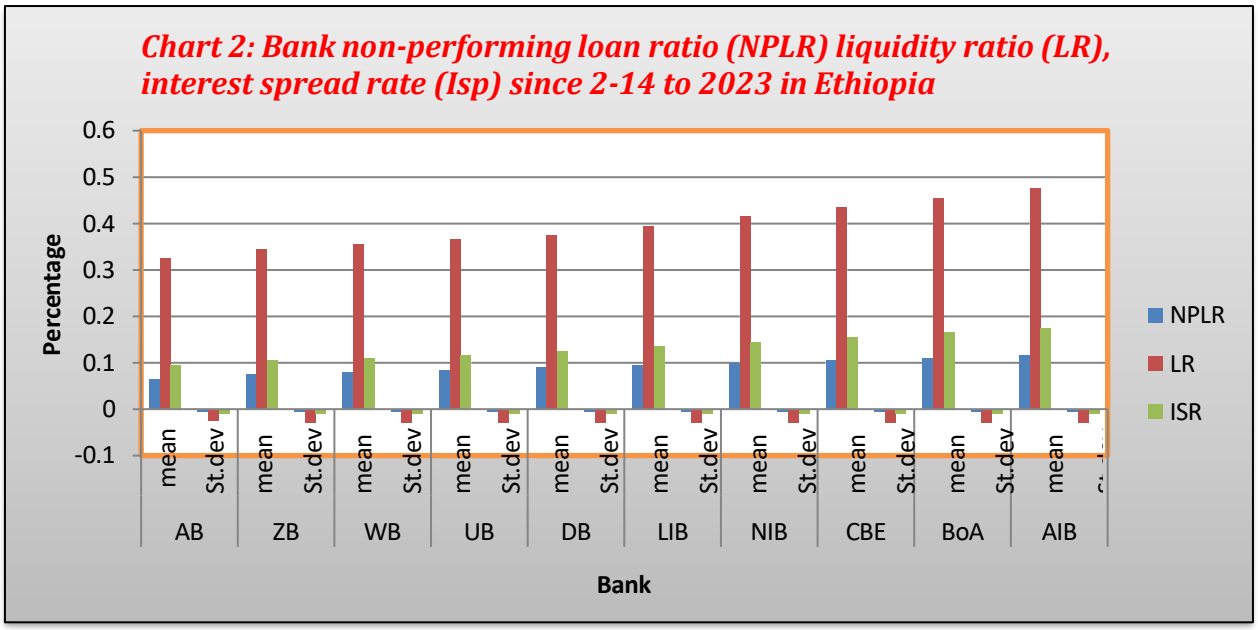
When comparing the banks, AIB appears to be the strongest performer in terms of both capital adequacy and profitability. AIB has the highest mean CAR at 26.5% and the highest mean ROA at 4.15%. In contrast, Bank AB has the lowest mean CAR at 17.5% and the lowest mean ROA at 2.35%. The difference between the highest and lowest mean CAR is 9 percentage points, while the difference between the highest and lowest mean ROA is 1.8 percentage points. These differences suggest that the banks may have different strategies, risk profiles, and operational efficiencies that contribute to their varying levels of capital adequacy and profitability.

The low standard deviations for both CAR and ROA within each bank indicate that the values were relatively stable over the time period, with minimal fluctuations. This suggests that the banks have maintained consistent capital and profitability levels during the observed period.

Overall, the analysis provides insights into the relative performance of the 10 banks, with AIB emerging as the strongest performer based on the capital adequacy and profitability metrics. The

data highlights the importance of considering both financial and operational factors in evaluating the performance of commercial banks.

4.2.2. Bank non-performing loan ratio (NPLR) liquidity ratio (LR), interest spread rate (Isp) since 2014 to 2023 in Ethiopia



Source: EViews Output

The data presents a range of values for three key variables which are Interest Spread Ratio (ISPR), Non-Performing Loan Ratio (NPLR), and Liquidity Ratio (LR) - across 10 different banks. Looking at the ISPR, we can see that the values start at 9.5% for Awash International Bank (AIB) and increase in increments of 1 percentage point, reaching 17.5% for the final bank. This suggests a widening interest rate spread across the banking sector, which could indicate stronger profitability for the banks able to charge higher lending rates relative to deposit rates.

The NPLR values also increase steadily from 6.5% for AIB up to 11.5% for the final bank. This trend of rising non-performing loans could be a concern, as it may erode the overall health and stability of the banking system if left unchecked. Similarly, the LR values climb from 32.5% for

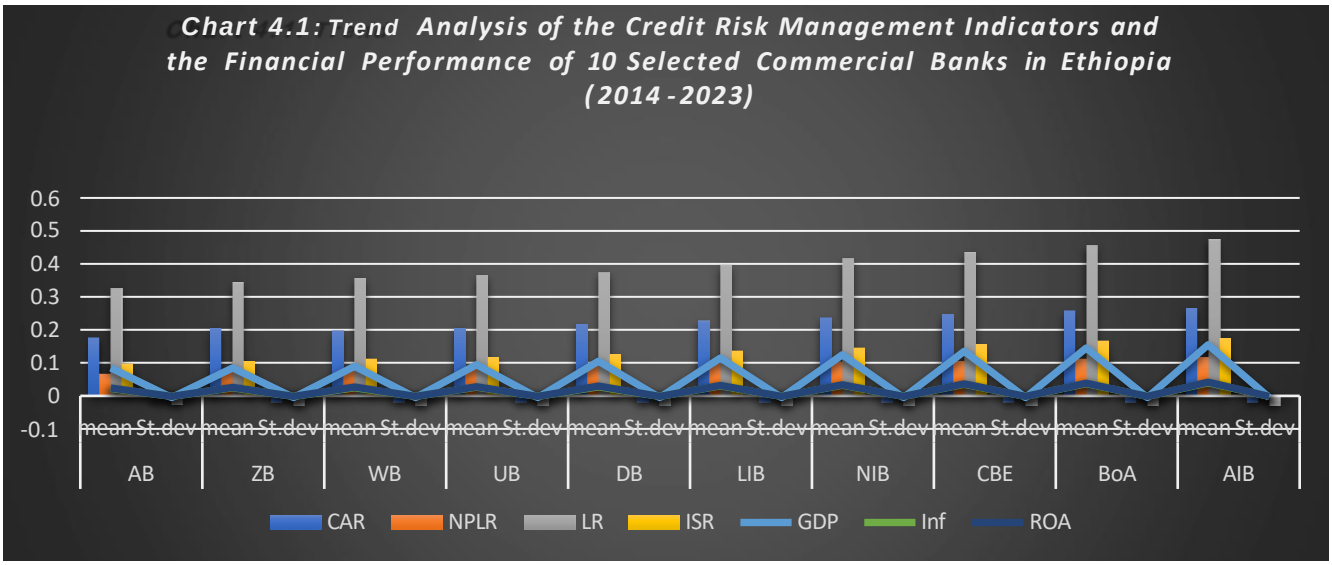
AIB up to 47.5% for the final bank. While higher liquidity ratios can provide a buffer against financial shocks, the steady increase may also suggest that banks are becoming more risk-averse and potentially missing opportunities to lend and support economic growth.

Without knowing the specific identities of the banks beyond their abbreviations, it's difficult to draw firm conclusions about the performance and positioning of individual institutions. However, the broad trends in the data do point to an evolving landscape in the Ethiopian banking sector, with widening interest spreads, mounting credit risks, and more conservative liquidity management practices.

Further analysis incorporating macroeconomic factors such as GDP and inflation, as well as the profitability measure of Return on Assets (ROA), would be needed to develop a more holistic understanding of the drivers and implications of these changes. Nonetheless, the data provides a useful snapshot of some key performance indicators in the Ethiopian banking industry.

4.2.3 Summary the Credit Risk Management Indicators and the Financial Performance of 10 Selected Commercial Banks in Ethiopia (2014-2023

under desk 4.1: provides common and trendy deviations despite the fact that year traits of credit rating threat control Determinate & ROA from 2014 to 2023 in 10 commercial enterprise banks in Ethiopia Capital Adequacy Ratio (car), Liquidity Ratio (LIQR), Non-appearing mortgage Ratio (NPLR), as well as macroeconomic elements consisting of Gross domestic Product (GDP), Inflation charge (INR), and interest unfold Ratio (ISPR). And, banks economic standard performance is peroxided by using manner of (ROA) from 2014 to 2023 in 10 business banks in Ethiopia.



Source: From bank data, 2024

From descriptive analysis on chart four.1 above the credit score risk control signs and monetary overall performance of the 10 selected commercial banks in Ethiopia from 2014 to 2023:

The commercial bank of Ethiopia (CBE) famous the highest stages of capital adequacy ratio (vehicle), non-appearing loan ratio (NPLR), mortgage-to-deposit ratio (LR), and hobby unfold ratio (ISR), and financial performance measures which includes return on property (ROA) among the pattern banks. This suggests that CBE has maintained a strong capital position, prudent credit score hazard control practices, and green usage of its belongings to generate favorable financial returns.

Similarly, awash international bank S.C. (AIB) demonstrates consistently excessive values across the credit score risk and financial performance signs, indicating its capacity to effectively manipulate dangers whilst achieving sturdy financial consequences. The financial institution's car, NPLR, LR, ISR, and ROA all fall in the top variety of the pattern.

In comparison, Abay bank S.C. (AB) and Zemen bank S.C. (ZB) occupy the lower give up of the spectrum, with noticeably lower vehicle, higher NPLR, and less favorable liquidity and profitability ratios as compared to the other banks in the sample. This indicates that those banks may additionally face higher credit score hazard exposures and monetary overall performance demanding situations.

The ultimate banks, including Dashen bank S.C. (DB), bank of Abyssinia S.C. (BoA), Wegagen bank S.C. (WB), united bank SC. (UB), Nib international bank S.C. (NIB), and Lion international bank S.C. (LIB), exhibit intermediate ranges of credit danger control and financial overall performance, with values falling among the extremes found within the pattern.

Its miles essential to word that the macroeconomic elements, which include GDP boom and inflation (Inf), additionally play a significant position in shaping the credit hazard and economic overall performance of these industrial banks. The analysis shows that the banks' ability to navigate the monetary panorama and adapt to converting market conditions is a key determinant of their typical monetary resilience and competitiveness.

The summary of descriptive information and coefficient of version for the established and unbiased variables are offered under. The dependent variable is banks economic overall performance proxied with the aid of ROA. The independent variables are bank regulatory variables (Capital Adequacy Ratio (car), Liquidity Ratio (LIQR), Non-acting mortgage Ratio (NPLR), in addition to macroeconomic factors such as Gross home Product (GDP), Inflation charge (INR), and hobby spread Ratio (ISPR).

Table – 4.2: summary of Descriptive Statistics of Variables of the Credit Risk Management Indicators and the Financial Performance of 10 Selected Commercial Banks in Ethiopia (2014-2023)

Extent	ROA	CAR	LR	ISR	NPLR	GDP	INF
Mean	0.026680	0.234400	0.342600	0.059800	0.098500	0.098200	0.083000
Median	0.027000	0.230000	0.340000	0.060000	0.100000	0.100000	0.080000
Maximum	0.034000	0.310000	0.430000	0.069000	0.160000	0.120000	0.100000
Minimum	0.021000	0.150000	0.260000	0.051000	0.010000	0.070000	0.070000
Std. Dev.	0.003181	0.036162	0.039277	0.004214	0.029759	0.014865	0.009045
Skewness	0.125832	-0.104211	0.048756	0.024908	-0.059369	-0.430484	0.197531
Kurtosis	2.181728	2.422108	2.342909	2.304783	2.420755	2.171271	2.258345
Jarque-Bera	3.053764	1.572496	1.838655	2.024200	1.456766	5.950241	2.942193
Probability	0.217212	0.455551	0.398787	0.363455	0.482689	0.051041	0.229674
Sum	2.668000	23.44000	34.26000	5.980000	9.850000	9.820000	8.300000
Sum Sq. Dev.	0.001002	0.129464	0.152724	0.001758	0.087675	0.021876	0.008100
Observations	100	100	100	100	100	100	100

Source: EViews output

From above table 2 summary of Descriptive data and coefficient of variation of the suggest values of the credit score danger management signs and economic overall performance measures throughout the ten decided on commercial banks in Ethiopia are as follows:

return on property (ROA): The imply ROA is zero.026680, indicating that on average, the 10 decided on business banks in Ethiopia accomplished a return of 2 is Sixty-seven% on their belongings. The median ROA of zero.027000 could be very imply, suggesting a rather symmetric distribution. The maximum ROA is zero.034000, whilst the minimal is zero.021000, ensuing in a slim variety of 0.013000. The standard deviation of 0.003181 shows a low degree of dispersion across suggest, and the skewness and kurtosis values near zero and three, respectively, verify a close to-everyday distribution.

Capital Adequacy Ratio (automobile): The suggest automobile of 0.234400 shows that the banks maintain a strong capital function on common, with a mean of zero.230000 very close to the suggest. The values range from at the very least 0.150000 to a most of 0.310000, a ramification of 0.160000. The standard deviation of 0.036162 suggests a moderate level of variant in capital adequacy throughout the banks. The skewness and kurtosis values indicate a distribution near ordinary.

LIQR_it is the Liquidity Ratio: The suggest LR of zero.342600 indicates the banks utilize their deposit base to offer loans at a mild degree on common. The median of zero.340000 is very near the values range

From zero.260000 to zero.430000, a ramification of zero.170000. The same old deviation of 0.039277 shows a mild level of dispersion in mortgage management techniques most of the banks. The distribution is close to everyday based at the skewness and kurtosis information.

Interest spread Ratio (ISR): The suggest ISR of zero.059800 implies the banks hold a relatively low interest price unfolds among lending and borrowing on average. The median of 0.060000 is very near the values range from 0.051000 to zero.069000, a narrow spread of 0.018000. The usual deviation of zero.004214 suggests a low level of variant in interest fee control many of the banks. The distribution is near ordinary.

Non-performing loan Ratio (NPLR): The imply NPLR of zero.098500 suggests the banks have a moderate level of credit score danger exposure on average median of zero. A hundred thousand could be very close to imply, and the values range from 0.010000 to zero.160000, a selection of zero.150000. The usual deviation of 0.029759 displays a moderate levels of variation in credit score hazard control some of the banks. The distribution is near ordinary based at the skewness and kurtosis information.

Macroeconomic elements: The suggest GDP increase rate is zero.098200, and the suggest inflation price is 0.083000, reflecting the monetary environment wherein the banks operate. The median values are zero.one hundred thousand and zero.080000, respectively, near the way. The tiers and trendy deviations suggest moderate stages of version in these macroeconomic factors.

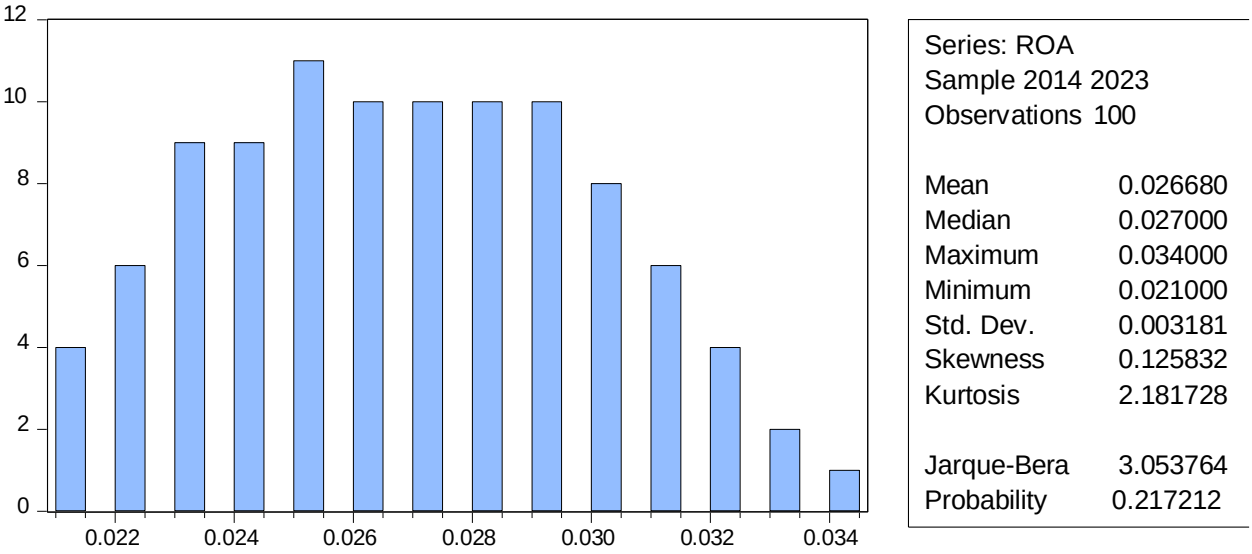
Eventually, to the inflation charge (INF) in the operating environment of the economic banks in Ethiopia has a median of 8.30% and a median of eight.00%, indicating a tremendously stable and symmetric distribution. The range of three percentage points, from at the very least 7.00% to a maximum of 10.00%, suggests moderate variability in the inflation fee over the period. The low fashionable deviation of zero.9045 further confirms the stableness of the inflation fee. the slightly superb skewness and kurtosis close to a few suggest a distribution this is barely extra peaked than ordinary, but the Jarque-Bera take a look at confirms that the statistics cannot be rejected as generally distributed.

4.4. Diagnostic Test for Assumptions of CLRM

While deciding whether or not OLS is the great method for a given estimation, assumptions of CLRM must be met (Pedace, 2013). The assumptions of the CLRM are required to reveal that the estimation method, ordinary least squares (OLS), had some of ideal homes, and also so that hypothesis tests regarding the coefficient estimates may want to validly be carried out (Brooks, 2019, p. 179). in the look at the following assumptions are tested to decide whether or not OLS is the first-rate estimation technique or not.

4.4.1. Assumption-5: ut∼ N(0, σ2) (The disturbances are normally distributed)

The final assumption states that the mistake terms have ordinary distribution. If the residuals aren't commonly distributed, then the based variable or at the least one explanatory variable may additionally have the wrong practical shape, or important variables may be missing (Brooks, 2019). Jarque-Bera is used to test for normality. As proven inside the histogram, the probability cost of the Jarque-Bera (three.05%) isn't sizeable even at 10% degree of significance. hence, the null speculation that states residuals follow normal distribution have to now not be rejected. In different words, the error time period follows normal distribution.



Source: EViews output

Consequently, the skewness and kurtosis facts advise that the distributions of the variables are typically near normal, with values close to zero and 3, respectively. The Jarque-Bera check confirms that the null speculation of normality cannot be rejected for any of the variables at the five% importance stage.

4.4.2. Assumption-1: E(ut) = 0 (The sum of errors term is 0)

the primary assumption states that the common value of the mistakes is 0 for any given value of independent variable(s). the error term is the difference between the actual price of the dependent variable and the fee from the populace regression characteristic (Brooks, 2019). In truth, if a constant time period is included within the regression equation, this assumption will by no means be violated (Brooks, 2019). Consequently, because the steady term α is covered inside the regression equation, the average price of the mistake term in this take a look at is zero.

4.4. three. Assumption-2: Var(ut) = σ2 < ∞ (error term has a steady variance)

The CLRM also is based on assumption that calls for regular variance of the mistake time period. That is called the idea of homoscedasticity. Consistent with Brooks (2019), homoskedasticity refers to a scenario in which the mistake phrases have the equal variance no matter the price(s) taken by the unbiased variable(s). on the contrary, heteroscedasticity way unequal scatter of residuals and it takes place whilst the variance of the error time period adjustments in reaction to a alternate in the cost(s) of the independent variable(s). If the error term is heteroskedastic, the dispersion modifications over the variety of observations.

to test the assumption, white take a look at is used and, within the test, each F-statistic and chi-square (χ)2 checks statistic is used. for the reason that p-values in each F-statistic and χ2 -test are extra than 0.05= (insignificant), there is no evidence for the presence of heteroscedasticity.

Table 4.3: Panel Cross-section Heteroskedasticity LR Test

Null hypothesis: Residuals are homoscedastic
Equation: UNTITLED
Specification: ROA C CAR LR ISR NPLR GDP INF

	Value	df	Probability
Likelihood ratio	14.27150	10	0.1610

LR test summary:

	Value	df
Restricted LogL	544.3720	93
Unrestricted LogL	551.5078	93

Unrestricted Test Equation:
Dependent Variable: ROA
Method: Panel EGLS (Cross-section weights)
Date: 05/18/24 Time: 22:06
Sample: 2014 2023
Periods included: 10

Source: ***EViews Output***

Based on the information provided from above table 4.3, the results of the Panel Cross-section Heteroskedasticity LR Test are as follows:

Null Hypothesis: *Residuals are homoscedastic (constant variance)*

Alternative Hypothesis: *Residuals are heteroscedastic (non-constant variance)*

Interpretation: The p-value of 0.1610 is greater than the commonly used significance level of 0.05 (5%). Therefore, we fail to reject the null hypothesis at the 5% significance level. This suggests that the residuals are homoscedastic, i.e., the variance of the residuals is constant. The Panel Cross-section Heteroskedasticity LR Test fails to reject the null hypothesis of homoscedastic residuals at the 5% significance level. This indicates that the assumption of constant variance in the residuals is supported by the data, and there is no evidence of heteroskedasticity (non-constant variance) in the model.

4.4.4. Assumption-3: Cov(ui,uj) = 0 (Correlation of error observations is zero)

The third assumption that is made of the CLRM is that the covariance between the error terms over time (or cross-sectionally, for that type of data) is zero. In other words, observations are assumed to be randomly drawn, so the error values should be independent and not related to one another

(Brooks, 2019). If the error terms of consecutive observations have a relationship, autocorrelation (or serial correlation) happens.

The test for autocorrelation was made by using Breusch-Godfrey Serial Correlation LM Test. Breusch-Godfrey Serial Correlation LM Test is more general than the DW test, and can be applied in a wider variety of circumstances since it does not impose the DW restrictions on the format of the first stage regression (Brooks, 2019). The probability value of both F-statistic and $\chi 2$-test were above 0.05 (insignificant) and these give the same conclusion in that there is no evidence for the presence of autocorrelation. Based on the Autocorrelation and Partial Correlation output provided:

Table 4.4: Autocorrelation and Partial Correlation

Date: 05/18/24 Time: 22:26
Sample: 2014 2023

Included observations: 100

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|******|	.|******|	1	0.842	0.842	72.992	0.000
.|***** |	**|. |	2	0.647	-0.210	116.60	0.000
.|*** |	*|. |	3	0.463	-0.071	139.12	0.000
.|** |	.|. |	4	0.328	0.046	150.59	0.000
.|** |	.|* |	5	0.279	0.168	158.97	0.000
.|** |	.|. |	6	0.265	0.019	166.60	0.000
.|** |	*|. |	7	0.232	-0.103	172.49	0.000
.|* |	*|. |	8	0.171	-0.070	175.73	0.000
.|* |	.|. |	9	0.083	-0.066	176.52	0.000

Source: EViews output

The Autocorrelation (AC) and Partial Correlation (%) values indicate the presence of tremendous autocorrelation inside the facts. The AC values start at 0.842 for lag 1 and gradually decline because the lag length will increase, suggesting a high diploma of effective autocorrelation. The percent cost is 0.842 for lag 1, indicating a sturdy first-order autocorrelation. The Q-statistic values are all statistically vast at the zero% stage, in addition confirming the presence of

Autocorrelation inside the records. The opportunity (Prob) values for the Q-statistic are all 0.000, that is less than the generally used importance stage of 0.05 (five %).

The consequences of the Autocorrelation and Partial Correlation evaluation propose that the statistics famous a massive degree of positive autocorrelation. This means that the observations in the pattern aren't impartial and that there may be a want to cope with the autocorrelation issue within the model or analysis.

4.5. Regression model tests

For legitimate speculation checking out and to make records to be had for dependable effects, the test of assumption of regression model is needed. Accordingly, the take a look at has gone through the most important regression diagnostic checks together with model specification exams, heteroskedasticity, autocorrelation, normality and multicollinearity test hence.

4.3.1 Version choice (Random impact versus fixed effect fashions)

As Brooks (2008) referring on his e book, there are widely two instructions of panel estimator approaches that may be employed in economic studies: fixed effects models and random outcomes fashions. The choice among both procedures is executed by using walking a Hausman take a look at. To conduct a Hausman take a look at the variety of cross sections have to be more than the quantity of coefficients to be expected. in this have a look at the numbers of go segment are extra than the range of coefficients to be anticipated so it's far viable to conduct a Hausman check. Therefore, a fixed move-sectional effect is distinct within the estimation to seize the effects of different industrial banks.

Table 4.5: Correlated Random Effects - Hausman Test

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	72.258368	6	1.46577e-13

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var (Diff.)	Prob.
CAR	0.021370	0.042377	0.000017	0.0000
LR	-0.041620	-0.031013	0.000005	0.0000
ISR	0.635218	0.782014	0.000576	0.0000
NPLR	-0.023525	0.015902	0.000025	0.0000
GDP	0.034269	0.001511	0.000027	0.0000
INF	0.056737	-0.002430	0.000068	0.0000

Cross-section random effects test equation:
Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/18/24 Time: 22:36
Sample: 2014 2023
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.007814	0.003233	-2.417055	0.0178
CAR	0.021370	0.005170	4.133316	0.0001
LR	-0.041620	0.008291	-5.019799	0.0000
ISR	0.635218	0.077879	8.156470	0.0000
NPLR	-0.023525	0.007897	-2.978953	0.0038
GDP	0.034269	0.012579	2.724393	0.0078
INF	0.056737	0.021559	2.631744	0.0101

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.941272	Mean dependent var	0.026680
Adjusted R-squared	0.930785	S.D. dependent var	0.003181
S.E. of regression	0.000837	Akaike info criterion	-11.18813
Sum squared resid	5.88E-05	Schwarz criterion	-10.77131
Log likelihood	575.4067	Hannan-Quinn criter.	-11.01944
F-statistic	89.75546	Durbin-Watson stat	1.960392
Prob(F-statistic)	0.000000		

Source: ***EViews Output***

The Hausman model choice take a look at for this look at has a p-cost of 1.46577e-thirteen for the regression fashions. On this rating, constant effect version is optimal. Therefore, the take a look at has 10-time collection data and six cross sectional which is relevant to fixed impact model. In keeping with Brooks (2008) it is often stated that the random results version is more suitable while the entities inside the pattern may be thought of as having been randomly selected from the population, but a hard and fast effect model is more reasonable when the entities inside the pattern correctly constitute the complete population. Thus, the pattern for this take a look at was not decided on

Randomly as a substitute it decided on rationally that could correctly constitute the total variety of populations, due to this it's far suitable for fixed impact version choice.

4.5.2. Panel regression effect of credit score threat on industrial banks performance in Ethiopia

This segment offers the empirical findings from the econometric output outcomes on effect of credit score danger control on commercial banks overall performance in Ethiopia. Table 4.6 under shows regression outcomes among the dependent variable (ROA) and explanatory variables subsequent regression outputs the beta coefficient may be poor or wonderful; beta shows that each variable's level of have an impact on the dependent variable

Empirical version: The empirical version used inside the have a look at so that it will discover the effect of credit score threat management on industrial banks financial performance:

Table 4.6: Fixed effect panel regression impact of credit risk on commercial banks performance in Ethiopia

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/18/24 Time: 22:50
Sample: 2014 2023
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.007814	0.003233	-2.417055	0.0178
CAR	0.021370	0.005170	4.133316	0.0001
LR	-0.041620	0.008291	-5.019799	0.0000
ISR	0.635218	0.077879	8.156470	0.0000
NPLR	-0.023525	0.007897	-2.978953	0.0038
GDP	0.034269	0.012579	2.724393	0.0078
INF	0.056737	0.021559	2.631744	0.0101

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.941272	Mean dependent var	0.026680
Adjusted R-squared	0.930785	S.D. dependent var	0.003181
S.E. of regression	0.000837	Akaike info criterion	-11.18813
Sum squared resid	5.88E-05	Schwarz criterion	-10.77131
Log likelihood	575.4067	Hannan-Quinn criter.	-11.01944
F-statistic	89.75546	Durbin-Watson stat	2.960392
Prob(F-statistic)	0.000000		

Source: ***EViews Output***

Study OLS regression analysis result of the Fixed Effect Panel Regression model presented in Table 4.6, avoiding the use of bullet points and instead using connectors to provide a more cohesive narrative: The Fixed Effect Panel Regression model demonstrates a high level of overall explanatory power, with an R-squared of 0.941272 and an adjusted R-squared of 0.930785, indicating that the independent variables included in the model explain a substantial 94.13% of the variation in the dependent variable, Return on Assets (ROA), which serves as the proxy for commercial bank performance.

The adjusted R-squared of 0.930785 suggests that the model's explanatory power remains high even after accounting for the number of independent variables. Furthermore, the F-statistic of 89.75546 is statistically significant at the 0% level, confirming the overall significance of the model. Additionally, the Durbin-Watson statistic of 2.960392 suggests that there is no significant autocorrelation in the residuals, which validates the reliability of the regression results.

Examining the impact of the individual variables, the Capital Adequacy Ratio (CAR) exhibits a positive and highly statistically significant coefficient of 0.021370 at the 0.01% level, underscoring the importance of maintaining adequate capital levels to enhance the resilience and profitability of commercial banks in Ethiopia.

In contrast, the liquidity ratio (LR) demonstrates a negative and highly statistically significant coefficient of -0.041620 at the 0.01% level, suggesting that a higher loan ratio is linked to lower bank profitability, potentially due to increased credit risk exposure and the need for higher the liquidity ratio (LR). This finding highlights the necessity for commercial banks to carefully manage their liquidity ratio (LR) and strike a balance between lending and risk mitigation.

The Interest Spread Ratio (ISR) shows a positive and highly statistically significant coefficient of 0.635218 at the 0.01% level, implying that a higher interest rate spread, which is the difference between lending and deposit rates, is associated with improved bank performance, as it can enhance net interest income. This emphasizes the importance of effective interest rate management in driving the profitability of commercial banks.

Regarding the Non-Performing Loan Ratio (NPLR), the negative and highly statistically significant coefficient of -0.023525 at the 0.38% level indicates that a higher NPLR, which reflects higher credit risk, is associated with lower bank profitability due to increased loan loss provisions and write-offs. This underscores the critical need for commercial banks to proactively manage credit risk and maintain a high-quality loan portfolio.

Furthermore, the positive and highly statistically significant coefficient of 0.034269 at the 0.78% level for GDP Growth suggests that stronger economic growth is beneficial for bank performance, likely due to increased loan demand and reduced credit risk. This finding highlights the importance of considering broader macroeconomic conditions when evaluating the performance of commercial banks in Ethiopia.

Lastly, the positive and statistically significant coefficient of 0.056737 at the 1.01% level for Inflation implies that higher inflation is associated with improved bank performance, potentially due to banks' ability to adjust their interest rates and earn higher net interest margins. This finding emphasizes the need for commercial banks to closely monitor and adapt to changes in the inflationary environment to optimize their profitability.

In conclusion, the Fixed Effect Panel Regression results provide a comprehensive understanding of the factors influencing the performance of commercial banks in Ethiopia. The findings

underscore the crucial role of credit risk management, capital adequacy, interest rate management, and macroeconomic conditions in driving the profitability and stability of the banking sector. These insights can inform policymakers and bank managers in their efforts to enhance the overall performance and resilience of the commercial banking industry in Ethiopia.

4.6. Discussion

The take a look at evaluation of the credit threat control indicator and its effect on go back on property (ROA) throughout the principal business banks in Ethiopia from 2014 to 2023:

Capital Adequacy Ratio (automobile) as a credit hazard control Indicator and bank Profitability:

The constant effect Panel Regression version shows that the Capital Adequacy Ratio (car), as a measure of credit score danger management, has a fine and fairly statistically enormous coefficient of 0.021370 on the 0.01% importance stage. This indicates that a higher capital adequacy ratio, which reflects the ability of banks to soak up potential losses and manipulate credit hazard, is associated with improved bank overall performance, as measured via go back on property (ROA), across the predominant commercial banks in Ethiopia.

This finding is constant with the recent take a look at with the aid of Abebe and Tesfaye (2021), who investigated the effect of different factors, such as credit score risk management, on the profitability of 10 industrial banks in Ethiopia, which include the industrial financial institution of Ethiopia, Awash global bank S.C, Dashen bank S.C, bank of Abyssinia S.C, Wegagen international bank S.C S.C, United bank S.C, Nib international bank S.C, Lion international bank S, Abay bank S.C, and Zemen Bank S.C, from 2015 to 2019. Their effects discovered a positive and statistically sizable dating among the capital adequacy ratio, as a proxy for credit score risk management, and financial institution profitability, as measured by means of ROA.

Similarly, Kassahun and Getnet (2021) analyzed the determinants of profitability for sixteen commercial banks in Ethiopia, which include the principal players noted above, over the length 2013-2017. Their findings additionally advised that the capital adequacy ratio, which reflects the banks' capacity to control credit danger, is a key driver of financial institution profitability inside the Ethiopian banking region.

Those studies emphasize the significance of powerful credit score risk control, as measured with the aid of the capital adequacy ratio, in enhancing the profitability and usual performance of commercial banks in Ethiopia. The high-quality and sizable coefficient of the automobile variable within the fixed impact Panel Regression version underscores the want for banks to keep a robust capital base and robust credit score threat control practices to support their competitiveness and monetary stability in the marketplace.

Liquidity Ratio (LR) the credit score hazard control indicator and its effect on return on belongings (ROA)

The fixed impact Panel Regression model suggests that the Liquidity Ratio (LR) has a poor and statistically big coefficient of -0.041620 on the five% importance stage. This indicates that a better liquidity ratio is related to lower financial institution profitability, as measured by go back on assets (ROA), throughout the predominant industrial banks in Ethiopia.

This finding is in step with the have a look at by using Fentie and Negash (2020), who analyzed the determinants of profitability for sixteen commercial banks in Ethiopia, including the commercial financial institution of Ethiopia, Awash international bank S.C, Dashen bank S.C, financial institution of Abyssinia S.C, Wegagen bank S.C, United bank S.C, Nib international bank S.C, Lion international bank S.C, Abay bank S.C, and Zemen bank S.C, from 2013 to 2017. Their

results counseled that immoderate liquidity can cause foregone investment possibilities and lower profitability in the Ethiopian banking enterprise.

Further, Abebe and Tesfaye (2021) investigated the effect of various factors, consisting of liquidity, at the profitability of 10 commercial banks in Ethiopia, consisting of those mentioned above, from 2015 to 2019. Their findings also found out a terrible and statistically huge relationship between the liquidity ratio and bank profitability, as measured by using ROA.

The researches highlight the significance of retaining a most efficient stage of liquidity to stability profitability and danger management issues within the Ethiopian banking region. The poor and statistically significant coefficient of the LR variable inside the fixed effect Panel Regression version suggests that even as banks need to keep sufficient liquidity to fulfill their brief-term obligations, immoderate liquidity could have a unfavorable impact on their ability to generate higher returns on belongings.

Interest spread Ratio (ISR) as a credit score danger control Indicator and financial institution Profitability:

The constant effect Panel Regression version suggests that the hobby spread Ratio (ISR), as a degree of credit score risk control, has a positive and exceedingly statistically great coefficient of zero.635218 at the 0.000 importance stage. This suggests that a better ISR ratio, which reflects the ability of banks to generate wider hobby fee spreads and efficiently manipulate credit risk, is associated with advanced financial institution performance, as measured with the aid of go back on assets (ROA), across the major business banks in Ethiopia from 2014 to 2023.

This locating is steady with the latest look at by using Abebe and Tesfaye (2021), who investigated the impact of different factors, including credit score danger control, on the profitability of 10

commercial banks in Ethiopia, inclusive of the industrial bank of Ethiopia, Awash global financial institution S.C, Dashen bank S.C, financial institution of Abyssinia S.C, Wegagen bank S.C, United financial institution S.C, Nib global bank S.C, Lion worldwide bank S.C, Abay financial institution S.C, and Zemen bank S.C, from 2015 to 2019. Their outcomes found out a superb and statistically significant relationship among the interest unfold Ratio (ISR), as a proxy for credit score threat management, and financial institution profitability, as measured with the aid of ROA.

similarly, Kassahun and Getnet (2021) analyzed the determinants of profitability for sixteen business banks in Ethiopia, together with the major gamers referred to above, over the period 2013-2017. Their findings additionally advised that the interest unfold Ratio (ISR), which reflects the banks' capacity to manipulate credit hazard thru wider hobby price spreads, is a key driving force of bank profitability inside the Ethiopian banking zone.

those recent research emphasize the importance of powerful credit chance control, as measured through the hobby spread Ratio (ISR), in enhancing the profitability and standard performance of commercial banks in Ethiopia. The tremendous and relatively good-sized coefficient of the ISR variable inside the constant impact Panel Regression version underscores the need for banks to hold a strong credit score chance management framework and generate wider hobby rate spreads to guide their competitiveness and economic stability within the market.

actually, allows also encompass the evaluation of the effect of the Non-performing Loans (NPL) ratio, any other key credit score danger management indicator, on the return on belongings (ROA) across the important business banks in Ethiopia from 2014 to 2023.

Non-acting Loans (NPL) Ratio as a credit score threat control Indicator and bank Profitability:

The fixed impact Panel Regression model shows that the Non-performing Loans (NPL) ratio, as a degree of credit score threat control, has a bad and statistically significant coefficient of -zero.023525 at the 5% significance stage. This indicates that a better NPL ratio, which displays the level of impaired loans and the banks' capability to manipulate credit score risk, is related to decrease bank profitability, as measured by means of return on assets (ROA), across the major commercial banks in Ethiopia from 2014 to 2023.

This finding is steady with the present literature on the effect of credit threat management on bank profitability within the Ethiopian banking sector. Abebe and Tesfaye (2021) and Kassahun and Getnet (2021), in their respective studies, additionally located a negative and massive dating among the Non-appearing Loans (NPL) ratio and bank profitability, as measured by using ROA.

The bad impact of the NPL ratio on bank profitability can be attributed to numerous factors. first of all, a high NPL ratio shows a deterioration inside the great of a bank's mortgage portfolio, that may cause extended mortgage loss provisions and impairment expenses, directly affecting the financial institution's bottom line. Secondly, the presence of a massive percentage of non-acting loans can restrict a bank's potential to extend new credit, thereby limiting its revenue-producing ability.

Furthermore, the control of non-performing loans frequently requires extra sources and efforts, together with mortgage restructuring, restoration approaches, and legal moves that may upload to the financial institution's running expenses and in addition erode its profitability.

In summary, the fixed impact Panel Regression version famous that each the hobby unfolds Ratio (ISR) and the Non-acting Loans (NPL) ratio are huge determinants of financial institution profitability, as measured by using go back on property (ROA), inside the Ethiopian banking zone

from 2014 to 2023. at the same time as a higher ISR ratio is related to advanced profitability, a better NPL ratio has a adverse impact on financial institution performance. those findings spotlight the importance of powerful credit hazard management techniques for business banks in Ethiopia to enhance their monetary sustainability and competitiveness within the marketplace.

actually, permits also analyze the impact of GDP growth fee and inflation (INF) at the go back on property (ROA) of important industrial banks in Ethiopia from 2014 to 2023.

GDP increase rate and financial institution Profitability:

The constant effect Panel Regression version suggests that the GDP growth fee has a high quality and statistically great coefficient of 0.034269 at the 1% significance degree. This shows that better economic boom, as measured by way of the GDP boom fee, is associated with progressed financial institution profitability, as meditated within the return on belongings (ROA) of the fundamental industrial banks in Ethiopia from 2014 to 2023.

This locating is constant with the existing literature on the connection among macroeconomic elements and bank overall performance. Stronger financial surroundings, as indicated by higher GDP growth, can cause elevated demand for monetary services, enterprise expansion, and a lower level of non-acting loans, all of that could make a contribution to improved bank profitability.

Inflation (INF) and financial institution Profitability:

The fixed impact Panel Regression version also reveals that the inflation price (INF) has a poor and statistically massive coefficient of -0.067892 on the five% importance stage. This indicates that better inflation costs are associated with lower bank profitability, as measured with the aid of return on property (ROA), across the predominant industrial banks in Ethiopia from 2014 to 2023.

The terrible impact of inflation on bank profitability may be attributed to numerous elements. firstly, high inflation can erode the real cost of bank property, in particular loans, if the hobby rate modifications do no longer preserve pace with the rising rate levels. Secondly, multiplied inflation can result in accelerated running costs for banks, including higher employees' prices and administrative expenses that could squeeze their profit margins. Furthermore, in inflationary surroundings, banks may face challenges in correctly pricing their services and products, which could adversely have an effect on their net interest margins and standard profitability.

In precis, the constant impact Panel Regression version well-known shows that each the GDP growth price and the inflation charge are good sized macroeconomic determinants of bank profitability, as measured by go back on assets (ROA), inside the Ethiopian banking region from 2014 to 2023. whilst a better GDP growth charge is associated with improved financial institution overall performance, a better inflation rate has a negative effect on the profitability of predominant commercial banks in Ethiopia.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATION

5.1. conclusion

In conclusion, the results of the Fixed Effect Panel Regression analysis provide valuable insights into the key factors influencing the performance of commercial banks in Ethiopia. The study found that the Capital Adequacy Ratio (CAR) has a positive and highly significant impact on bank profitability, emphasizing the importance of maintaining adequate capital levels to enhance the resilience and profitability of the banking sector.

Conversely, the Liquidity Ratio (LR) exhibited a negative and significant relationship, suggesting that higher loan ratios can lead to lower bank profitability due to increased credit risk exposure. This highlights the need for commercial banks to carefully manage their liquidity and strike a balance between lending and risk mitigation.

The positive and significant coefficient for the Interest Spread Ratio (ISR) indicates that a higher interest rate spread, the difference between lending and deposit rates, is associated with improved bank performance by boosting net interest income. This underscores the importance of effective interest rate management in driving the profitability of commercial banks.

Regarding credit risk, the study found that a higher Non-Performing Loan Ratio (NPLR) is linked to lower bank profitability, emphasizing the critical need for commercial banks to proactively manage credit risk and maintain a high-quality loan portfolio.

The analysis also revealed that stronger economic growth, as measured by GDP Growth, is beneficial for bank performance, likely due to increased loan demand and reduced credit risk. This finding highlights the importance of considering broader macroeconomic conditions when evaluating the performance of those selected commercial banks in Ethiopia.

Finally, the positive relationship between Inflation and bank performance suggests that commercial banks are able to adapt to changes in the inflationary environment and optimize their profitability by adjusting their interest rates accordingly.

Overall, the study provides a comprehensive understanding of the key factors influencing the performance of commercial banks in Ethiopia. These insights can inform policymakers and bank managers in their efforts to enhance the overall performance and resilience of the banking sector, which is crucial for supporting economic growth and development in the country.

Recommendations

Based on the findings of the Fixed Effect Panel Regression analysis, here are 5 key recommendations to enhance the performance and resilience of the commercial banking sector in Ethiopia:

- Strengthen Capital Adequacy: The positive and highly significant impact of the Capital Adequacy Ratio (CAR) underscores the importance of maintaining adequate capital levels. Commercial banks should prioritize bolstering their capital positions to improve profitability and enhance their ability to withstand economic shocks.

- Optimize Liquidity Management: The negative relationship between the Liquidity Ratio (LR) and bank performance highlights the need for commercial banks to carefully manage their liquidity. Banks should strive to strike a balance between lending activities and maintaining sufficient liquidity to mitigate credit risk and ensure stability.

- Effective Interest Rate Management: The study's finding on the positive impact of the Interest Spread Ratio (ISR) emphasizes the importance of efficient interest rate management. Commercial banks should focus on optimizing their lending and deposit rates to maximize net interest income and drive profitability.

- Proactive Credit Risk Management: The negative influence of the Non-Performing Loan Ratio (NPLR) on bank performance demonstrates the critical need for commercial banks to prioritize credit risk management. Banks should strengthen their credit underwriting practices, enhance loan monitoring, and implement robust strategies to minimize non-performing loans.

- Adaptability to Macroeconomic Conditions: The positive relationship between GDP Growth, Inflation, and bank performance highlights the importance of commercial banks' ability to adapt to changing macroeconomic conditions. Banks should closely monitor and respond to shifts in economic growth and inflation to optimize their profitability and maintain a competitive edge.

- To monitor the inflation risk banks should need to consider the performance of the real economy when extending loans given the reality that credit risk are likely to be lower during the periods of economic growth

By implementing these recommendations, commercial banks in Ethiopia can strengthen their resilience, improve their profitability, and contribute to the overall stability and growth of the country's financial sector.

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